

CLAIMS

1. A method for reducing the methane content in an off-gas stream of a gas-fired plant, wherein at least a portion of said off-gas stream is contacted with a plasma and a catalyst.
2. A method according to claim 1, wherein further the NO_x content of
5 said off-gas stream is reduced.
3. A method according to any one of the preceding claims, wherein said plasma is generated by the use of an electrical or an electromagnetic field.
4. A method according to claim 3, wherein the plasma is generated by
10 use of an electrical field of 1-100 kV/cm.
5. A method according to any one of the preceding claims, wherein the plasma is generated by means of an alternating voltage of a frequency of 100 Hz to 100 kHz.
6. A method according to any one of the preceding claims, wherein the
15 plasma is maintained with the aid of a partial discharge.
7. A method according to claim 6, wherein the partial discharge is generated by use of a dielectric.
8. A method according to any one of the preceding claims, wherein the whole off-gas stream or virtually the whole off-gas stream is contacted with
20 said plasma and said catalyst.
9. A method according to any one of the preceding claims, which is carried out at a temperature of 300 - 500 °C.
10. A method according to any one of the preceding claims, wherein said catalyst comprises Al₂O₃, zeolite, ZrO₂, Ga₂O₃, TiO₂, WO₃, perovskite or
25 combinations thereof.
11. A method according to claim 8, wherein said catalyst comprises γ -Al₂O₃.

12. A method according to any one of the preceding claims, wherein said catalyst is a three-way catalyst, which comprises Rh, Pt or Pd on Al₂O₃ support, if desired with additions of Ce, La, Zr or Ce.

13. A method according to any one of the preceding claims, wherein
5 said catalyst is an oxidation catalyst, which comprises Ag or Pt on a metal oxide support.